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A Reversal of Fortune for Korean Women

Explaining 1983's Upward Turn in Relative Earnings

Relative earnings for Korean women across education groups dropped substantially between 1971 and 1983. The pronounced recovery after 1983 is largely explained by a strong compression in market returns to skills.

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Summary findings

Between 1971 and 1983, Korea's mean gender earnings ratio remained virtually stagnant at 47 percent. But after 1983, the earnings ratio took a distinct turn upward. In other words, not until after 1983 did Korean women make any progress in closing the gender-earnings gap.

When controlling for education, the analysis reveals a surprising drop in relative earnings across education groups in the 1970s and early 1980s, and a recovery thereafter. Rodgers uses an extremely rich set of microdata (suitable for decomposition) to explain the trends in Korea's earnings differential.

Results indicate that most of the 1983 reversal is attributable to a strong compression in market returns to skills and to narrowing gender differences in education and experience.

The widening gender earnings differential across education groups before 1983 resulted primarily from a growing gender gap in unobserved characteristics. Growing gender differences in unmeasured ability or increased wage discrimination could explain this trend.

After 1983, women with high school education or less benefit primarily from a dramatic narrowing in the economy's distribution of market payoffs to skills, enough for women to begin to catch up to men in relative earnings.

A compression in the return to skills helped only some groups. Women with college educations did not experience increased benefits from changes in the market payoff to skills.

Stricter enforcement of Korea's equal-pay-for-equal-work provision could help reduce the outright discrimination against women workers that might be the underlying problem. By boosting the potential of Korea's female labor force, stronger enforcement of Korea's equal opportunity provisions would improve the country's economic productivity.

This paper — a product of the Gender Analysis and Policy Group, Poverty and Social Policy Department — is part of a larger effort in the department to study gender dimensions of economic development. Copies of the paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Dawn Ballantyne, room S10-147, telephone 202-458-7198, fax 202-522-3237, Internet address dballantyne@worldbank.org. May 1997. (42 pages)

A Reversal of Fortune for Korean Women:

Explaining the 1983 Upward Turn in Relative Earnings*

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Introduction

Despite real GDP growth rates that averaged 9 percent per year in the 1970s and early 1980s, Korea's mean gender earnings ratio remained virtually stagnant at 47 percent. Then, after 1983, the earnings ratio took a distinct turn upward. When controlling for education, the analysis reveals a surprising drop in relative earnings across education groups between 1971 and 1983, and a recovery thereafter. How can we explain this widening differential between male and female earnings in the earlier period, and the narrowing after 1983? The answer to this question has strong implications for the types of human capital, including the level and quality of education, in which Korean women may choose to invest. Women's investment choices will in turn affect the future productivity of Korea's economy.

Changes in macroeconomic conditions and labor market policies provide an overall context for understanding the dip and the subsequent recovery in earnings ratios across education groups. The early 1980s mark the resumption of growth following the 1979 oil crisis, the 1980-81 Korean recession, and the ensuing adjustment period (Mazumdar, 1993). As renewed growth generated new employment opportunities, the government relaxed its quotas on the number of college students, leading to a flood of new college graduates in the labor market and a compression in the returns to schooling. The government further relaxed controls in the labor market in 1987 by liberalizing collective bargaining procedures. This reform of the industrial relations system, a part of the overall democratization in Korea, led to greater strike activity and union organization (Fields, 1994). Another labor policy change that affected women's employment and earnings was the 1987 Gender-Equal Employment Act, partly meant to rectify Korea's extremely segregated occupational and industrial structure.[1] As noted in Amsden (1990), industrial segregation by gender is common in

developing countries, but it is more extreme in Korea.

This paper uses an extremely rich micro-data set from 1971 to 1992 that is highly suitable for performing decompositions to explain the trends in Korea's gender earnings differential. Results from a fairly standard cross-sectional decomposition indicate that women's relative progress in such observed characteristics as education and experience play an important role in the 1983 reversal. However, a large and growing portion of the earnings disparity between men and women remains unexplained. Other developing country studies typically stop here and attribute this growing residual gap to increased wage discrimination by gender.[2] This study contains a more detailed trend analysis that separates changes in market returns to skills, which have little to do with discrimination, from the residual gap. Because men have more education and experience than women, any drop in the returns to education and experience causes average male earnings to fall relative to women's earnings. Results from the trend analysis indicate that a strong compression in market returns to skills and narrowing gender differences in education and experience explain most of the 1983 upward turn in women's relative earnings.

The Data

The study uses micro-data from Korea's *Occupational Wage Survey*, an establishment survey conducted annually by Korea's Ministry of Labor since 1970. The data set is quite comprehensive by developing country standards, with detailed information on individual workers' educational attainment, actual labor market experience, occupation, industry, and region. The surveys cover all industries up through 1986, after which agriculture, forestry, hunting, and fishing are excluded. This change in sampling procedure in 1986 does not appear to cause a significant change in the types of

non-farm enterprises covered by the survey. To test for such compositional changes, I constructed a battery of sample statistics on average real earnings by gender across various education, industry, and experience classifications. There are no noticeable spikes in these figures to indicate differences in the coverage of non-farm enterprises. Surveyed establishments must employ at least 10 workers and are selected by a stratified random sampling method. The surveys, in their exclusion of workers in small enterprises, the self-employed, family workers, temporary workers, and public sector workers, represent approximately one-half of Korea's total non-agricultural labor force (Choi, 1993). I use data for 1971, 1976, 1980, 1983, 1986, 1989, and 1992, where the samples for each year are randomly drawn from the original surveys.

This study's sample consists of non-farm workers aged 15 to 65 with positive reported earnings and hours worked. Exclusions cause me to drop no more than 2 percent of the randomly selected samples in any given year.[3] Earnings are defined as reported monthly base earnings plus monthly overtime earnings, and the earnings data are top coded for just two observations in 1976.[4] Although some survey questions changed over the twenty year span, I could construct the same variables for every year at the cost of dropping interesting variables (such as skill level, marital status, and union membership) contained in later years but not in earlier years.[5] Females constitute approximately 37 percent of the sample in each year. The largest drawback to the data set is its limitation to individuals already employed. Hence, I cannot control for any selection effects that may overstate female earnings and understate the gender earnings differential.[6]

Earnings Ratio Trends and Explanations

The analysis begins with a description of how Korea's female-male earnings ratio has

evolved over time. First I construct unadjusted earnings ratios, which simply compare average reported earnings for women and men. To adjust the ratios for differences in hours worked, I estimate, by education categories, the following log-earnings equation for male and female workers in year t (where $i=m,f$, and subscripts for individuals are omitted):

$$E_{it} = X_{it}\beta_{it} + v_{it} \ . \qquad (1)$$

The notation E_{it} is the natural logarithm of monthly earnings, X_{it} denotes an nxk-dimensional matrix of observed characteristics, β_{it} is the k-dimensional column vector of regression coefficients, and v_{it} is a white-noise error term assumed to be normally distributed with variance σ^2_{it}. Observed characteristics include log monthly hours worked; a binary variable for part-time; binary variables for education level attained; potential experience (age, minus years of education, minus six) and its square[7]; establishment-specific tenure and its square; binary variables for occupation-specific experience[8]; the percent female in each occupation; and binary variables for supervisor, establishment size, industry, and location.[9] The variable definitions and mean values by gender are found in Appendix Tables 1 and 2. Following the procedure in Blau and Beller (1992), I evaluate equation (1) for each gender-education group at the male means for the time variables, and at own-group means for remaining variables.

Table 1 reports the unadjusted and adjusted earnings ratios for the entire sample and by education groups. The table shows that between 1971 and 1983, the total unadjusted earnings ratio remained virtually stagnant at 47 percent, and after 1983 it took a sharp upward turn. However, controlling for education differences by separating workers into education groups reveals an erosion in relative earnings across groups in the 1970s and early 1980s, particularly for more highly

educated women. Earnings ratios exhibit a recovery after 1983 for all groups except college and above, whose recovery begins after 1986 and coincides with the even sharper upward turn for the other education groups. Despite these recoveries, by the end of the period, women with high school and college educations had still not recovered their 1971 levels of relative earnings. The adjusted ratios lead to similar conclusions, with equally dramatic losses in the earlier period for women with high school and above. Because on average women worked more hours than men, predicting female earnings with male hours worked causes the adjusted ratios to be smaller than the unadjusted ratios in most years.

Figure 1 provides a framework for describing four determinants of the reversal in the trend for Korea's gender earnings differential. I examine these determinants with descriptive statistics in the remainder of this section and with a more formal analysis in the decomposition sections. The first explanation appeals to gender differences in observed characteristics. Sample means in the Appendix point to a strong improvement in female educational attainment relative to males, which helps to explain the recovery in the aggregate earnings ratio. The sample means indicate that in 1971, 51 percent of females and 27 percent of males had primary school or below; these shares fell to 12 percent for females and 4 percent for males by 1992. Women made substantial gains relative to men in attaining high school and college educations, especially after 1983. However, the data do indicate a growing gap between males and females in average job spells and in occupation-specific experience during the 1970s and early 1980s. These growing differences could explain the declining earnings ratios across education groups during the early period.

Another factor that may have worked against women, particularly before 1983, is a growing concentration in low-wage industries such as clothing, textiles, and leather, and in low-wage

occupations such as clerical and sales work. The evidence on whether industrial and occupational segregation increased during the period is mixed. Table 2 presents changes in Korea's non-agricultural employment structure for men and women from 1971 to 1992. Within manufacturing, female workers demonstrate a strong relative move from low-skilled jobs in textiles and apparel to higher-skilled jobs in electrical and electronic machinery. In 1971, 56 percent of all female manufacturing workers were employed in textiles and apparel, compared to 36 percent by 1992. Although men also moved out of this sector, their shift was less dramatic than that of women, which in turn led to a reduction from 68 to 60 percent in the share of textile and apparel workers who are female. Among occupations, women gained much ground in the higher-paying professional and technical occupations but lost ground in the administrative and managerial positions. The relative losses in managerial jobs are also reflected in the sample means, which indicate a sharp relative increase for males in supervisory occupations, especially between 1971 and 1983. Finally, Table 2 reports that both men and women experienced a sizeable shift from production to service occupations. This partly reflects what Cho (1994: 100) refers to as the "3D" syndrome: "a strong tendency on the part of workers to avoid difficult, dangerous, and dirty jobs." Largely a result of the influx of new female labor market entrants, the female concentration of clerical, sales, and other service occupations grew sharply.

As illustrated in Figure 1, changes in unobserved characteristics may also explain Korea's earnings ratio patterns. This category includes relative changes in the unmeasured skills of male and female workers as they age, relative changes in the unmeasured skills of new labor market entrants, or changes in wage discrimination by gender (unequal pay for equal skill). A growing gap in unobserved characteristics due to any of these reasons would cause women to lose ground when

ranked in the male residual earnings distribution, which controls for observed qualifications. Table 3 reports that this outcome has indeed occurred. The first column shows alternative percentile rankings in the female residual earnings distribution. The columns thereafter show women's positions for each year in the male earnings distribution, after controlling for gender differences in measured characteristics. For example, one interprets the first cell as indicating that a woman with average female earnings falls 38.4 percent of the way up the male residual earnings distribution. In other words, after controlling for differences in observed qualifications, a woman who ranks close to the 50th percentile of the female distribution ranks at only the 38th percentile of the male distribution. Table 3 documents a sharp erosion between 1971 and 1992 in the mean female position in the male residual earnings distribution. The decline occurs for both upper and lower quantiles, and results are similar for all education groups except college and above. Consistent with the declining earnings ratios until 1983, most of the erosion in the female position occurs between 1971 and 1983. The most highly educated women actually experienced a considerable improvement in their ranking up through 1983, and a small setback thereafter.

The final two explanations in Figure 1 for the trend in Korea's gender earnings differential encompass changes in the distribution of market payoffs to observed and unobserved skills. Appendix Table 3 provides strong evidence of a narrowing in the returns to observed skills, as measured by earnings regression coefficients for men. The returns to a college education fell by more than half, with much of the decline occurring after 1983. This finding is consistent with Kim and Topel (1995), who show that improvements in educational attainment resulted in a substantial compression in the returns to schooling: as the supply of college graduates increased relative to that of less educated workers, their relative wages dropped. An important reason why the supply of

college graduates rose so sharply, particularly during the 1980s, is a series of government measures relaxing quotas on the number of college students. The government had originally imposed these quotas to boost the quality of a college education, reduce the concentration of students in urban centers, and enhance the employment prospects of college graduates (Kwark and Rhee, 1993). Because relatively more men had college educations, the particularly large drop in the college wage premium after 1983 caused average male earnings to fall relative to women's earnings and contributed to the recovery in the gender earnings ratio.

Appendix Table 3 also reports a decline in experience premiums and a flattening over time in the age-earnings profile, as reflected by the coefficients on the potential experience variable. This again is consistent with Kim and Topel (1995), who argue that the decline in relative wages for older men constitutes another dimension of the narrowing in the male wage distribution. The table further shows a declining wage penalty, especially after 1983, for the occupational percent female, and a declining wage premium after 1980 for being a supervisor. These findings are supported by evidence in Kwark and Rhee (1993), who find that occupational wage dispersion narrowed as occupational mobility in both directions increased. The coefficient estimates also reveal a falling premium for working in a larger firm, which is consistent with findings in Aw and Batra (1996) for Taiwan. However, the table does report a growing premium during much of the period for working in heavy manufacturing industries. This could reflect increased wages over time for workers employed in industries that experience more rapid technological changes (Choi, 1993).

To illustrate changes in the returns to unobserved characteristics, Table 4 reports the dispersion in male earnings, controlling for compositional changes in the male work force. One interprets each cell in the first row as the difference in log earnings between men in the 90th and

10th percentiles of the male residual earnings distribution; other rows have a similar interpretation. Table 4 indicates a substantial decline in residual earnings inequality, where the 90-10 spread fell by .43 log points between 1971 and 1992. This accounts for approximately 65 percent of the change in total male earnings inequality, a result consistent with Kim and Topel (1995). The next two rows indicate that the narrowing occurred more strongly between the median and lower conditional quantiles, although men in the upper conditional quantiles also experienced a decline in earnings inequality. The next three rows, which show the 75-25 spread, indicate that this broad trend is not driven by changes solely in the tails of the distribution. As will be illustrated shortly, any narrowing in the distribution of male residual earnings should help to close the gender earnings gap.

Explaining the Reversal: Methodology

This section examines the four explanations more formally with two decomposition analyses. The first procedure utilizes individual years of cross-sectional data. By standardizing the error term, I can rewrite equation (1) as

$$E_{it} = X_{it}\beta_{it} + \sigma_{it}\theta_{it}\,, \tag{2}$$

where θ_{it}, the standardized residual for males ($i=m$) and females ($i=f$), is distributed normally with mean zero and variance one for all t. Next, I reweight the female earnings equation using the coefficients and standard deviation from the male earnings regression as follows:[10]

$$E_{ft} = X_{ft}\beta_{mt} + \sigma_{mt}\theta_{ft}\,. \tag{3}$$

By using these "male prices," I am predicting the average earnings females would receive, given

their observed qualifications, if they were paid like males. This methodology follows convention in the literature in using male wages, with the implication that they better reflect the labor market payoffs for productivity characteristics.[11] The gender earnings differential can then be written as

$$E_{mt} - E_{ft} = (X_{mt} - X_{ft})\beta_{mt} + \sigma_{mt}(\theta_{mt} - \theta_{ft}) \ . \qquad (4)$$

The left-hand side of equation (4) is the total log-earnings differential between males and females. On the right-hand side, the first term is the explained gap (the portion attributed to gender differences in observed characteristics). The second term is the residual gap (a function of unobserved prices and the error terms). When evaluated at the means, the residual gap is based on the level of male residual earnings inequality (σ_{mt}) and the mean female's position in the male residual earnings distribution (θ_{ft}).

Although the residual gap is commonly attributed to wage discrimination by gender, it may encompass changes in returns to skills that have little to do with discrimination. The more detailed trend decomposition allows us to better understand the composition of this residual earnings gap and hence the behavior of the aggregate earnings differential. This second procedure continues from equation (4). Letting Δ denote the male-female difference within a year in the variable that follows, one can rewrite equation (4) as

$$\Delta E_t = \Delta X_t \beta_{mt} + \sigma_{mt} \Delta \theta_t \ . \qquad (5)$$

Using equation (5), the rate of change in the gender differential between any two years, *t* and *s*, becomes

$$\Delta E_t - \Delta E_s = (\Delta X_t \beta_{mt} - \Delta X_s \beta_{ms}) + (\sigma_{mt} \Delta\theta_t - \sigma_{ms} \Delta\theta_s) \ . \qquad (6)$$

Choosing year s as the base for prices by adding and subtracting $\Delta X_t \beta_{ms}$ and $\sigma_{ms} \Delta\theta_t$ produces the following trend decomposition equation:

$$\Delta E_t - \Delta E_s = (\Delta X_t - \Delta X_s)\beta_{ms} + \Delta X_t(\beta_{mt} - \beta_{ms}) + \sigma_{ms}(\Delta\theta_t - \Delta\theta_s) + (\sigma_{mt} - \sigma_{ms})\Delta\theta_t \ . \qquad (7)$$

The first term on the right-hand side of equation (7) measures changes in observed characteristics, holding prices fixed. The second term captures changes in returns to these characteristics. The third term reflects changes in the position of females in the male residual earnings distribution, due to changes in unobserved characteristics. The final term measures changes in residual male earnings inequality, or changes in the returns to unobserved skills. In the analysis, I use the average across all years as the base year to avoid possible extremes within any given year.

Figure 2 illustrates how a narrowing in the distribution of male residual earnings affects the gender earnings differential. The figure depicts a narrowing in the dispersion of male residual earnings from $\sigma_{m1} f(\theta_m)$ in period 1 to $\sigma_{m2} f(\theta_m)$ in period 2, and it holds constant θ_{f1}, the percentile ranking of a woman with average earnings in the male residual earnings distribution in period 1. One can see that the decline in male residual earnings inequality leads to a reduction in the residual earnings gap between men and women, from gap_1 to gap_2. More women have earnings that rank toward the lower end of the male distribution. Therefore, women effectively receive a higher wage reward for their given positions in the male distribution when male residual earnings inequality lessens.

Explaining the Reversal: Results

Table 5 reports the cross-sectional decomposition results for earnings differentials evaluated at the sample means for all variables in every year. The results are reported as male-female gaps measured in log points, where each gap may be converted to a ratio of geometric means by exponentiating its negative. Hence, the relatively stagnant earnings gap from 1971 to 1983 in the top row corresponds to the flat earnings ratio in that period, and the decline in the earnings gap after 1983 corresponds to the recovery in the earnings ratio. Table 5 shows that gender differences in observed characteristics explain a smaller proportion of the aggregate log-earnings gap over time. Among observed characteristics, gender differences in education and experience account for most of the explained gap, and these differences between men and women narrow considerably, especially after 1983. Differences in time inputs and location account for a minimal share during the period and are not reported. The small contribution of regional disparities in explaining the earnings gap is consistent with findings in Lindauer (1985).

All education groups except college and above show a similar pattern, where differences in observed characteristics explain a falling share of the log-earnings gap. The fall is most pronounced for workers with primary school and below. The unusual pattern for college and above reflects the earlier result that college educated women actually improved their ranking in the male residual earnings distribution. Interestingly, the explained shares for the middle school and high school groups decline the most after 1983. The main conclusion to draw from Table 5 is that shrinking differences between men and women in observed characteristics, especially education and experience, play an important role in the upward turn in women's relative earnings after 1983.

However, the analysis cannot pinpoint why a large and growing portion of the gap for most education groups remains unexplained.

Results in Table 5 are consistent with three benchmark studies on Korea. Using a similar sample and methodology, Lee and Lindauer (1991) explain 60 percent of the aggregate gender earnings differential in 1971 and 44 percent in 1986. My inclusion of occupation, industry, and location characteristics accounts for the large difference between the explained shares in Table 5 and those in Lee and Lindauer. Bai and Cho (1992) explain 63 percent of the differential in 1984 and 58 percent in 1989, and Lee (1991) explains 66 percent of the gender earnings differential in 1982 and 60 percent in 1988, again lower than the estimates in Table 5. All three studies make claims about the trend in wage discrimination based on the residual gap estimates without examining the residual gap more closely.

Table 6, which reports the trend analysis results, allows us to better understand the composition of the residual earnings gap. The table divides the 1971-92 period roughly in half and presents the results for 1971-83, 1983-92, and the period as a whole. Intuitively, 1983 makes sense as a break point because it marks the reversal in the earnings ratio trends.[12] In Table 6, negative values indicate reductions in the log-earnings gap over the specified period, while positive values indicate increases in the gap. One can see from the top row that the aggregate earnings gap stagnated until 1983 and narrowed sharply thereafter, by almost 3 percent per year. The subsequent decomposition generates a clean result at the aggregate level: women gained much ground in both sub-periods through a strong reduction in the dispersion of market payoffs to skills, as indicated by a narrowing in both observed and unobserved prices. The narrowing is even stronger after 1983. This result is consistent with Kim and Topel's (1995) finding that a narrowing in the returns to skills

is the most important reason for the total decline in male wage inequality, more so than compositional changes in male productivity characteristics.

However, women lost ground in both sub-periods due to a widening gap in unobserved characteristics, especially in the earlier period. Women also lost ground in the earlier period due to an increasing differential in observed qualifications, which was driven by growing differences in years of experience, not educational attainment. As noted earlier, women actually made substantial progress relative to men in their educational attainment. The main conclusion to draw from the aggregate results is that after 1983, shrinking gender differences in education and experience worked together with a strong narrowing in returns to skills to finally outweigh the growing gap in unobserved characteristics. This led to the sizeable reduction in the earnings differential after 1983.

In the remainder of Table 6, I control for educational attainment by dividing workers into education groups. Once we control for women's relative progress in education, the total earnings gap between 1971 to 1983 for each group no longer stagnates but actually grows larger. All four groups report a strong reduction in the gap after 1983. The aggregate decomposition results hold for all education groups except college and above: namely, in both sub-periods women were helped by a substantial narrowing in observed and unobserved price dispersion, but they were hurt by a sharp increase in the gender gap in unobserved characteristics. This growth in the residual gap is particularly strong for those with less education. The primary school, middle school, and high school groups vary the most in the contribution of years of experience. While workers with the least education had diminishing gender differences in experience through the entire period, workers with more education had increasing experience differentials. These three education groups exhibit a common trend in the contribution of industry and occupation, where gender differences led to wider

earnings gaps from 1971 to 1983 but smaller gaps thereafter. The most robust result across these education groups is the important role of a compression in observed and unobserved prices in explaining the recovery of women's relative earnings after 1983.

As we saw earlier, women with high school and college educations report an increase in the total earnings differential for the 1971-1992 period. However, the decomposition results for college and above are different from those of other education groups. This group reports a sizeable increase in the earnings differential during the first sub-period, driven mostly by a growing gender gap in occupation and industry characteristics. This result partly reflects the increasing tendency of well-educated males to attain highly paid supervisory positions relative to their well-educated female counterparts. Unlike women in other groups, college educated women were helped by only a very small narrowing in the dispersion of observed and unobserved prices. College educated workers are the only group to experience a shrinking gender gap in unobserved characteristics after 1983, which actually made a sizeable contribution to the large reduction in the total earnings gap. Yet the main contributor to the post-1983 recovery in relative earnings for college educated women is declining gender differences in observed experience and job characteristics.

Why did the gender gap in unobserved characteristics widen across periods for most education groups? As depicted in Figure 1, one explanation is a growing differential between men and women in unmeasured skills. For example, women who were in the labor force at the beginning of the period may have interrupted their careers for home activities. If women chose to spend an increasing amount of time in home production and a decreasing amount of time in the work force during the period of analysis, then the gender gap in human capital investment may have widened. The analysis may have picked up this growing difference in labor force commitment as an

expanding gap in unobserved characteristics. However, I include for each worker the number of years of actual occupation-specific experience and establishment-specific experience. This should control for most of the effects of intermittency.

Even if the measures of actual experience do not pick up all the effects of intermittency, the available evidence suggests that women are increasing, not decreasing, their attachment to the labor force.[13] Table 7 presents several indicators of Korean women's labor force commitment. The table shows that Korean women are waiting longer to get married: the mean age at marriage for women rose from 23.3 in 1970 to 25.5 in 1990, and the male-female difference in mean age at marriage dropped from 3.8 to 3.1 years. Also during this period, the share of women in the 20-24 age group who were never married rose from 57.2 percent to 80.5 percent, and the share of older women who were never married also rose. Moreover, labor force participation rates are increasing for married women in the prime age groups for childbearing and child rearing, and the share of female workers with five or more years of continuous service more than tripled. Once starting a family, women are having fewer children: the total fertility rate fell by more than half, from 4.3 births per woman in 1970 to 1.8 in 1992. Additional evidence indicates that a growing proportion of women are reporting "utilization of ability" and "practical experience" as the primary reasons for their employment, and the number of children accommodated by child care centers is growing rapidly (Republic of Korea, 1993, Roh *et al.*, 1994). This evidence does not support the hypothesis of diminishing female attachment to the labor force and suggests that we must consider other explanations for the adverse changes in unobserved characteristics.

Widening gender differences in unmeasured abilities of new entrants to the labor force may explain the growing gap in unobserved characteristics. One could argue that, given a distribution

of innate ability across females, most women employed in the beginning period came from the upper end of the ability distribution. Then as lower-skilled women entered the workforce, their earnings dragged down the average for all women. Because I cannot control for this change in innate ability of new entrants, the decomposition would attribute this decline in women's relative earnings to a growing gender gap in unobserved characteristics. This explanation seems plausible given the large increase in female employment during the period of analysis, but without data on employment rates by education groups for the entire period it is difficult to test this hypothesis. Hence, we must consider growing gender differences in unmeasured ability among new labor market entrants as a possible source of the widening gap in unobserved characteristics. Of course, outright wage discrimination by gender remains as an alternative explanation.

Concluding Remarks

This study has shown that despite rapid economic growth, Korea's gender earnings differential across education groups actually grew more severe during the 1970s and early 1980s. It was not until after 1983 that women with high school educations or below made any progress in closing the gender earnings gap. The widening earnings differentials before 1983 for women in this category resulted primarily from a growing gender gap in unobserved characteristics. This expanding residual gap may reflect increasing gender differences in the unmeasured skills of new labor market entrants, and it may also reflect increasing wage discrimination by gender. After 1983, women with high school or below benefitted from strong relative improvements in education and experience. These women were also helped by a dramatic narrowing in the economy's distribution of market payoffs to skills, enough to begin to catch up with men in their relative earnings. College

educated women stand apart for not experiencing much of an impact from changes in the returns to skills. For women in this category, most of the growing earnings gaps before 1983 and shrinking gaps thereafter can be explained by changes in observed characteristics, particularly gender differences in sectors of employment and in occupations.

Hence, a compression in the returns to skills helped only some groups in some periods, suggesting that policy makers cannot look to economy-wide declines in income inequality as the primary means for improving the relative position of women. Furthermore, women continued to face adverse changes in unobserved characteristics throughout the entire period. If this growing residual gap is indeed a result of increased wage discrimination, the government may need to take more direct action. Regarding discrimination, Alice Amsden (1990: 85) writes: "Not only has Korea set world records with its growth rate in wages, it has also outcompeted other countries in its discrimination against women workers." Korea's Gender-Equal Employment Act of 1987 stipulates that employers can be imprisoned for up to two years if they pay different wages for the same jobs, but few if any employers have actually gone to jail.[14] Stricter enforcement of Korea's equal pay for equal work provision would help to reduce outright wage discrimination.

However, the gender earnings ratio will not budge much further if women remain concentrated in low-wage occupations with few post-employment training opportunities. The maximum penalty imposed on firms who blatantly employ, train, and promote mostly men is less than $3500. Stricter penalties for violating Korea's equal opportunity provisions could go a long way in reducing the obstacles that keep women in the lower ranks of the male earnings distribution. More generally, by boosting Korean women's labor force potential, stronger enforcement of Korea's equal opportunity provisions would enhance the productivity of the entire economy.

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Figure 1. Framework for Determinants of Earnings Differential Trends

	Observed	*Unobserved*
Characteristics	Education Experience Occupation/Industry Location	Unmeasured Skills Discrimination by Gender
Market Payoffs	Returns to Observed Characteristics	Returns to Unobserved Characteristics

Figure 2. Effect of Narrowing Male Residual Earnings Dispersion on Gender Earnings Gap

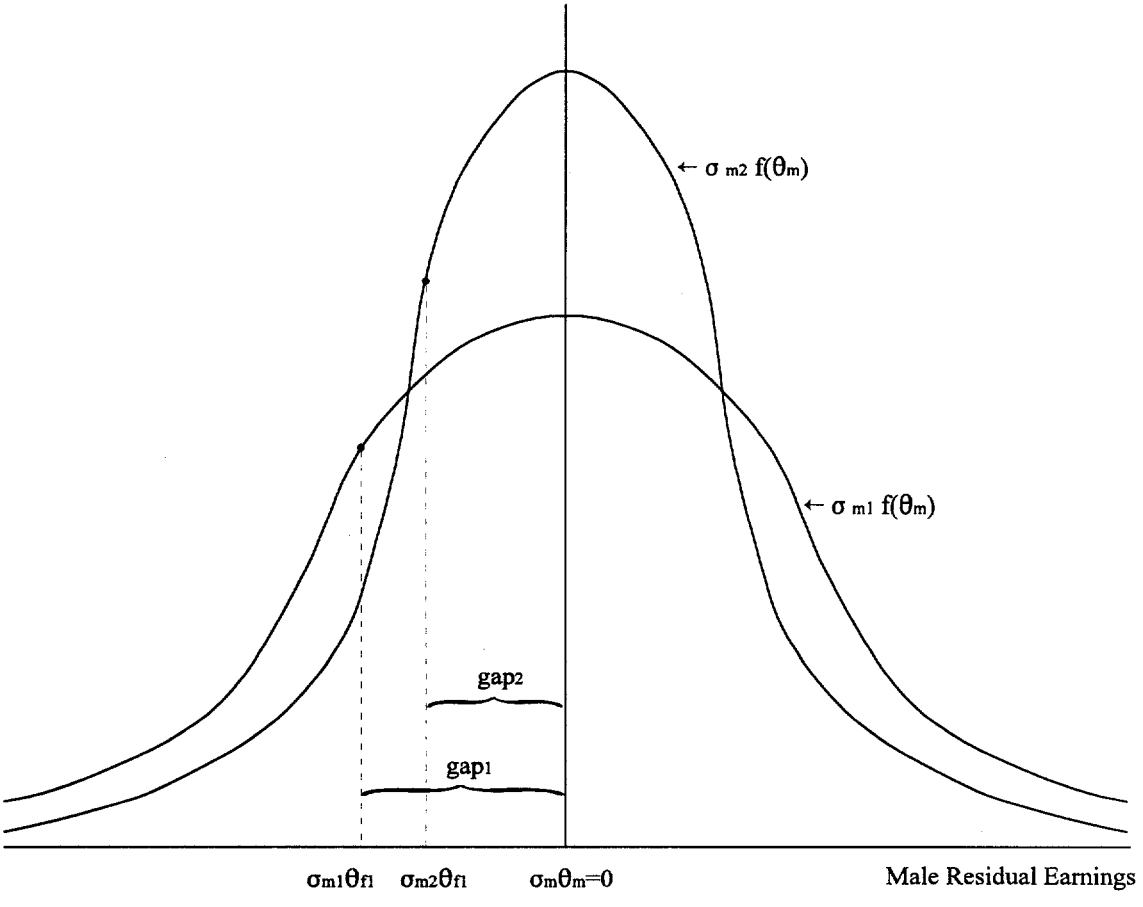

Table 1. Female-Male Earnings Ratios, 1971-1992[a] (In Percent)

Year	*All Levels*	*Primary and Below*	*Middle School*	*High School*	*College and Above*
			Unadjusted Earnings Ratios		
1971	46.6	54.3	53.3	64.5	77.4
1976	49.5	59.3	59.0	60.0	67.2
1980	46.7	53.3	53.0	56.5	61.2
1983	47.3	51.8	51.9	55.7	66.1
1986	48.8	52.3	52.0	56.0	65.5
1989	54.5	55.1	56.2	60.2	66.5
1992	57.3	59.5	56.7	60.7	69.6
			Adjusted Earnings Ratios[b]		
1971	46.2	53.0	53.1	64.8	77.7
1976	49.4	59.0	59.7	59.9	66.6
1980	45.7	50.7	52.6	57.0	61.2
1983	46.0	48.8	51.0	56.1	66.0
1986	48.2	50.1	51.7	56.7	65.6
1989	53.9	53.4	56.0	61.0	66.6
1992	57.6	59.1	58.4	62.3	69.9

[a] Ratio of the geometric means of female and male monthly earnings.

[b] Adjusted for hours worked by evaluating the earnings regression for each gender-education group at the male means for the time variables and at own-group means for remaining variables.

Table 2. Korea's Non-Agricultural Employment Structure by Gender (In Percent)

	Total Workers		Male Workers		Female Workers		Percent Female	
Year	*1971*	*1992*	*1971*	*1992*	*1971*	*1992*	*1971*	*1992*
Employment Structure by Manufacturing Sector								
Food, Beverages, and Tobacco	9.1	7.3	10.4	7.3	7.4	7.1	36.6	35.2
Textiles and Apparel	36.7	21.6	21.0	13.4	56.0	36.1	68.3	60.2
Wood and Paper	10.1	6.3	14.2	7.5	4.9	4.2	21.8	24.2
Chemical	12.6	12.2	15.6	13.4	8.8	10.2	31.3	30.0
Metal and Mineral	13.1	14.6	20.8	18.3	3.6	8.1	12.4	20.1
Electrical and Electronic	7.3	20.4	7.7	18.3	6.9	24.2	42.2	42.8
Other Machinery and Equipment	11.1	17.6	10.2	21.8	12.2	10.0	49.1	20.5
All Manufacturing	100.0	100.0	100.0	100.0	100.0	100.0	44.7	36.0
Employment Structure by Occupation								
Professional and Technical	5.8	14.3	7.6	15.6	2.4	11.8	15.4	28.2
Administrative and Managerial	1.1	3.7	1.6	5.5	0.1	0.1	2.4	1.1
Clerical	17.0	26.3	18.2	26.8	14.9	25.4	31.8	33.0
Sales	0.8	2.3	0.9	1.8	0.6	3.2	26.8	47.8
Service	4.9	6.1	5.1	5.6	4.5	7.2	33.5	40.0
Production, Transportation, and Laborers	70.5	47.3	66.6	44.7	77.5	52.4	39.8	37.9
All Occupations	100.0	100.0	100.0	100.0	100.0	100.0	36.2	34.2

Table 3. Female Position in the Male Residual Earnings Distribution (In Percent)

Year	*1971*	*1976*	*1980*	*1983*	*1986*	*1989*	*1992*
Female Ranking			Female Position in Male Residual Earnings				
All Education Groups							
Mean	38.4	34.5	24.5	28.7	29.1	27.2	23.5
10th	6.3	8.6	4.1	4.3	4.3	4.1	2.7
50th	39.5	34.9	24.7	29.2	30.9	28.1	23.5
90th	80.8	71.8	63.4	71.2	70.7	68.2	67.3
Primary and Below							
Mean	44.7	38.1	25.9	24.3	20.9	18.6	10.7
10th	7.1	5.6	3.7	2.6	1.9	2.0	1.0
50th	46.4	42.0	26.9	24.8	21.1	18.8	10.3
90th	86.5	80.1	67.0	68.8	65.0	59.2	47.3
Middle School							
Mean	43.6	39.3	30.4	35.5	34.8	29.4	16.7
10th	8.9	10.9	7.1	7.6	5.9	3.8	1.5
50th	45.2	39.4	30.7	36.6	37.8	31.4	16.6
90th	82.5	75.2	66.5	73.9	73.5	71.5	59.1
High School							
Mean	39.2	31.9	22.3	26.7	24.5	24.3	20.5
10th	6.7	7.2	4.0	4.3	4.2	4.5	2.9
50th	39.3	31.9	21.8	26.3	24.7	23.7	19.8
90th	84.1	71.2	59.4	67.8	63.5	62.2	59.8
College and Above							
Mean	41.5	45.6	44.5	56.9	56.5	54.8	55.2
10th	7.4	15.7	6.6	11.3	7.9	9.7	9.9
50th	43.8	46.3	45.1	61.5	62.9	59.7	57.2
90th	82.2	74.5	89.6	93.1	93.8	92.0	92.7

Table 4. Log Residual Earnings Dispersion for Males, 1971-1992

Year	*1971*	*1976*	*1980*	*1983*	*1986*	*1989*	*1992*
Spread[a]			Difference in Residual Log Earnings				
90-10	1.031	0.923	0.824	0.744	0.676	0.664	0.602
90-50	0.488	0.451	0.409	0.355	0.334	0.325	0.304
50-10	0.543	0.472	0.415	0.389	0.342	0.339	0.298
75-25	0.532	0.481	0.425	0.384	0.341	0.339	0.305
75-50	0.257	0.233	0.213	0.186	0.170	0.168	0.154
50-25	0.275	0.248	0.212	0.197	0.171	0.171	0.151

[a] Difference in conditional quantile of log earnings.

Table 5. Cross-Sectional Decomposition of Earnings Gaps by Education Groups (In Log Points)

Year	*1971*	*1976*	*1980*	*1983*	*1986*	*1989*	*1992*
All Levels							
Total Earnings Gap	0.765	0.702	0.761	0.750	0.717	0.607	0.557
Explained[a]	0.641	0.541	0.530	0.577	0.563	0.438	0.372
Edu/Exp	0.484	0.419	0.372	0.384	0.370	0.303	0.259
Occ/Ind	0.172	0.128	0.170	0.203	0.194	0.134	0.111
Residual	0.124	0.161	0.231	0.173	0.153	0.169	0.185
% Explained	83.8	77.0	69.7	77.0	78.6	72.2	66.8
Primary and Below							
Total Earnings Gap	0.610	0.523	0.629	0.657	0.648	0.596	0.519
Explained[a]	0.554	0.414	0.405	0.432	0.414	0.335	0.211
Exp	0.413	0.287	0.215	0.198	0.148	0.118	0.084
Occ/Ind	0.192	0.147	0.225	0.275	0.297	0.243	0.133
Residual	0.056	0.109	0.224	0.225	0.234	0.261	0.308
% Explained	90.9	79.1	64.3	65.7	63.9	56.2	40.6
Middle School							
Total Earnings Gap	0.630	0.527	0.635	0.657	0.655	0.576	0.568
Explained[a]	0.565	0.432	0.466	0.542	0.548	0.432	0.334
Exp	0.430	0.332	0.307	0.339	0.315	0.255	0.185
Occ/Ind	0.156	0.096	0.167	0.216	0.233	0.175	0.137
Residual	0.065	0.096	0.169	0.115	0.106	0.144	0.233
% Explained	89.7	81.9	73.3	82.6	83.8	75.0	58.9
High School							
Total Earnings Gap	0.439	0.510	0.570	0.585	0.579	0.507	0.499
Explained[a]	0.329	0.318	0.324	0.403	0.395	0.321	0.302
Exp	0.299	0.251	0.253	0.284	0.269	0.214	0.197
Occ/Ind	0.041	0.062	0.064	0.121	0.123	0.092	0.087
Residual	0.110	0.192	0.246	0.183	0.184	0.186	0.197
% Explained	75.0	62.3	56.9	68.8	68.2	63.3	60.5
College and Above							
Total Earnings Gap	0.256	0.397	0.490	0.415	0.423	0.409	0.362
Explained[a]	0.169	0.346	0.448	0.466	0.468	0.442	0.395
Edu/Exp	0.165	0.226	0.276	0.305	0.333	0.311	0.265
Occ/Ind	0.015	0.119	0.168	0.157	0.131	0.124	0.127
Residual	0.088	0.051	0.043	-0.052	-0.045	-0.033	-0.032
% Explained	65.8	87.1	91.3	112.4	110.5	108.1	108.9

[a] The time and location variables account for the difference between the explained gap and its component parts.

Table 6. Rates of Change in Gender Earnings Gaps by Educational Attainment [a] (In Percent)

Period	*1971-1983*	*1983-1992*	*1971-1992*
All Levels			
Total Change	-0.046	-2.774	-0.857
	(0.256)	(0.506)	(0.309)
Observed Characteristics	0.652	-0.768	0.230
	(0.284)	(0.562)	(0.210)
Edu/Exp	0.440	-0.560	0.142
	(0.135)	(0.267)	(0.125)
Occ/Ind	0.185	-0.345	0.027
	(0.167)	(0.330)	(0.105)
Observed Prices	-1.037	-1.930	-1.302
	(0.148)	(0.292)	(0.121)
Edu/Exp	-1.253	-1.032	-1.187
	(0.080)	(0.159)	(0.049)
Occ/Ind	0.182	-0.885	-0.135
	(0.098)	(0.194)	(0.120)
Unobserved Characteristics	0.691	0.439	0.616
	(0.311)	(0.614)	(0.170)
Unobserved Prices	-0.352	-0.515	-0.400
	(0.089)	(0.175)	(0.051)
Primary and Below			
Total Change	0.662	-1.858	-0.088
	(0.412)	(0.815)	(0.339)
Observed Characteristics	-0.034	-1.937	-0.600
	(0.232)	(0.458)	(0.230)
Exp	-0.242	-1.345	-0.570
	(0.084)	(0.166)	(0.120)
Occ/Ind	0.296	-0.975	-0.082
	(0.260)	(0.513)	(0.190)
Observed Prices	-0.649	-0.612	-0.638
	(0.265)	(0.524)	(0.143)
Exp	-1.516	0.477	-0.923
	(0.174)	(0.344)	(0.222)
Occ/Ind	0.747	-1.073	0.206
	(0.148)	(0.293)	(0.201)
Unobserved Characteristics	1.467	1.896	1.594
	(0.264)	(0.521)	(0.149)
Unobserved Prices	-0.121	-1.206	-0.444
	(0.134)	(0.264)	(0.131)

Table 6. continued (In Percent)

Period	*1971-1983*	*1983-1992*	*1971-1992*
Middle School			
Total Change	0.459	-1.287	-0.061
	(0.452)	(0.894)	(0.302)
Observed Characteristics	0.982	-1.130	0.354
	(0.496)	(0.979)	(0.343)
Exp	0.700	-1.163	0.146
	(0.313)	(0.619)	(0.253)
Occ/Ind	0.290	-0.290	0.117
	(0.257)	(0.509)	(0.151)
Observed Prices	-0.785	-1.453	-0.983
	(0.230)	(0.455)	(0.142)
Exp	-1.316	-0.516	-1.078
	(0.157)	(0.310)	(0.117)
Occ/Ind	0.461	-0.851	0.071
	(0.147)	(0.290)	(0.155)
Unobserved Characteristics	0.383	2.169	0.914
	(0.364)	(0.718)	(0.267)
Unobserved Prices	-0.122	-0.874	-0.345
	(0.066)	(0.131)	(0.084)
High School			
Total Change	1.099	-1.741	0.255
	(0.188)	(0.371)	(0.305)
Observed Characteristics	0.703	0.231	0.563
	(0.258)	(0.510)	(0.148)
Exp	0.304	0.254	0.289
	(0.158)	(0.311)	(0.085)
Occ/Ind	0.376	-0.005	0.263
	(0.127)	(0.252)	(0.079)
Observed Prices	-0.114	-1.575	-0.548
	(0.164)	(0.324)	(0.172)
Exp	-0.401	-1.295	-0.667
	(0.127)	(0.251)	(0.113)
Occ/Ind	0.238	-0.497	0.019
	(0.083)	(0.165)	(0.087)
Unobserved Characteristics	0.908	0.223	0.705
	(0.301)	(0.594)	(0.177)
Unobserved Prices	-0.398	-0.621	-0.464
	(0.151)	(0.298)	(0.085)

Table 6. continued (In Percent)

Period	*1971-1983*	*1983-1992*	*1971-1992*
College and Above			
Total Change	1.255	-1.695	0.378
	(0.494)	(0.976)	(0.400)
Observed Characteristics	1.194	-0.845	0.588
	(0.171)	(0.339)	(0.226)
Exp	0.133	-0.345	-0.009
	(0.063)	(0.125)	(0.059)
Occ/Ind	0.958	-0.458	0.537
	(0.149)	(0.295)	(0.164)
Observed Prices	0.222	-0.140	0.114
	(0.282)	(0.557)	(0.157)
Exp	0.283	-0.114	0.165
	(0.256)	(0.505)	(0.144)
Occ/Ind	-0.061	-0.026	-0.051
	(0.250)	(0.494)	(0.135)
Unobserved Characteristics	0.113	-0.584	-0.095
	(0.306)	(0.604)	(0.180)
Unobserved Prices	-0.273	-0.126	-0.230
	(0.168)	(0.332)	(0.092)

[a] Figures represent average annual rates of change and are calculated using a linear spline with a break point in 1986. Standard errors are in parentheses. A negative sign indicates that the gap has become smaller, and a positive sign indicates that the gap has grown larger.

Table 7. Indicators of Korean Women's Labor Force Comitment

	1970	*1990*
Mean Age at First Marriage		
Women	23.3	25.5
Men	27.1	28.6
Male-Female Difference	3.8	3.1
Share of Women Never Married		
Ages 20-24	57.2	80.5
Ages 25-49	2.8	8.0
Labor Force Participation Rates[a]		
Married Women (All Age Groups)	33.9	41.3
Married Women (20-24)	17.4	27.6
Married Women (25-29)	22.3	27.5
Married Women (30-34)	32.2	36.8
Married Women (35-39)	41.1	47.7
Share of Female Workers With Five or More Years of Continuous Service[b]	6.5	22.0
Total Fertility Rate (Births/Woman)[c]	4.3	1.8

Sources: Republic of Korea (1993); Roh, Kim, and Mun (1994), and World Bank (1994).
[a] Figures are for 1983 and 1992.
[b] Figures are for 1980 and 1992.
[c] Figures are for 1970 and 1992.

Appendix Table 1. Earnings Regression Variable Means — Male

Year	*1971*		*1976*		*1980*		*1983*	
Dependent Variable								
Log Monthly Earnings	10.105	(0.639)	11.229	(0.618)	12.003	(0.534)	12.466	(0.499)
Time Input Variables								
Log Hours/Month	5.356	(0.196)	5.472	(0.231)	5.426	(0.186)	5.445	(0.193)
Part-Time	0.048	(0.214)	0.012	(0.107)	0.022	(0.147)	0.020	(0.139)
Education and Experience Variables								
Primary School and Below*	0.270	(0.444)	0.195	(0.397)	0.150	(0.357)	0.108	(0.310)
Middle School	0.305	(0.460)	0.307	(0.461)	0.311	(0.463)	0.303	(0.460)
High School	0.280	(0.449)	0.321	(0.467)	0.360	(0.480)	0.392	(0.488)
Junior College	—	—	0.027	(0.161)	0.032	(0.176)	0.039	(0.193)
College or Higher	0.145	(0.352)	0.150	(0.357)	0.147	(0.354)	0.159	(0.365)
Experience (age-education-6)	15.849	(8.744)	15.312	(9.187)	15.076	(9.360)	15.611	(9.184)
Experience Squared/100	3.277	(3.461)	3.188	(3.587)	3.149	(3.682)	3.280	(3.644)
Establishment-Specific Tenure	2.840	(3.172)	2.951	(3.678)	3.062	(3.784)	4.275	(4.219)
Tenure Squared/100	0.181	(0.660)	0.222	(0.594)	0.237	(0.607)	0.361	(0.729)
Years in Occupation < 5 years*	0.647	(0.478)	0.678	(0.467)	0.660	(0.474)	0.478	(0.500)
Years in Occupation 5-9 years	0.236	(0.425)	0.213	(0.409)	0.213	(0.410)	0.308	(0.462)
Years in Occupation > 9 years	0.116	(0.321)	0.109	(0.312)	0.126	(0.332)	0.214	(0.410)
Occupation and Industry Variables								
Percent Female	0.161	(0.225)	0.224	(0.238)	0.217	(0.246)	0.175	(0.231)
Supervisor	0.060	(0.237)	0.114	(0.318)	0.088	(0.283)	0.147	(0.354)
Small Firm*	0.304	(0.460)	0.286	(0.452)	0.224	(0.417)	0.124	(0.330)
Medium Firm	0.437	(0.496)	0.349	(0.477)	0.376	(0.484)	0.422	(0.494)
Large Firm	0.259	(0.438)	0.365	(0.481)	0.400	(0.490)	0.454	(0.498)
Mining	0.074	(0.262)	0.067	(0.250)	0.041	(0.198)	0.046	(0.211)
Light Manufacturing 1	0.061	(0.238)	0.048	(0.215)	0.047	(0.212)	0.051	(0.221)
Light Manufacturing 2*	0.123	(0.328)	0.126	(0.332)	0.121	(0.326)	0.114	(0.318)
Heavy Manufacturing 1	0.219	(0.413)	0.206	(0.404)	0.195	(0.396)	0.191	(0.393)
Heavy Manufacturing 2	0.181	(0.385)	0.241	(0.428)	0.299	(0.458)	0.298	(0.457)
Utilities/Construction	0.046	(0.209)	0.038	(0.192)	0.053	(0.224)	0.055	(0.228)
Commerce	0.023	(0.150)	0.029	(0.169)	0.034	(0.181)	0.033	(0.178)
Transport/Storage/Communication	0.170	(0.376)	0.103	(0.304)	0.102	(0.303)	0.104	(0.305)
Business Services	0.043	(0.202)	0.061	(0.239)	0.049	(0.215)	0.052	(0.222)
Social Services	0.062	(0.241)	0.080	(0.271)	0.060	(0.237)	0.055	(0.229)
Location Variables								
Seoul*	0.354	(0.478)	0.330	(0.470)	0.306	(0.461)	0.313	(0.464)
Pusan	0.155	(0.361)	0.161	(0.367)	0.150	(0.357)	0.125	(0.331)
Kyunggi	0.115	(0.319)	0.143	(0.350)	0.184	(0.387)	0.195	(0.396)
Kangwon, Choongchung, and Julla	0.217	(0.412)	0.190	(0.393)	0.149	(0.356)	0.150	(0.357)
Kyungsang	0.159	(0.366)	0.175	(0.380)	0.212	(0.409)	0.218	(0.413)
Number of Observations	120,899		18,326		238,190		356,927	

* Excluded dummy variable in full-sample regressions. Standard deviations in parentheses

Appendix Table 1. (continued)

Year	*1986*		*1989*		*1992*	
Dependent Variable						
Log Monthly Earnings	12.705	(0.466)	13.111	(0.428)	13.535	(0.386)
Time Input Variables						
Log Hours/Month	5.415	(0.186)	5.386	(0.172)	5.360	(0.172)
Part-Time	0.018	(0.133)	0.029	(0.168)	0.014	(0.117)
Education and Experience Variables						
Primary School and Below*	0.076	(0.265)	0.056	(0.230)	0.043	(0.202)
Middle School	0.258	(0.437)	0.215	(0.411)	0.154	(0.361)
High School	0.440	(0.496)	0.474	(0.499)	0.457	(0.498)
Junior College	0.047	(0.211)	0.060	(0.238)	0.077	(0.267)
College or Higher	0.180	(0.384)	0.194	(0.396)	0.269	(0.444)
Experience (age-education-6)	15.838	(9.142)	15.933	(9.367)	16.417	(10.183)
Experience Squared/100	3.344	(3.638)	3.416	(3.762)	3.732	(4.299)
Establishment-Specific Tenure	5.124	(4.693)	5.429	(5.046)	6.046	(5.723)
Tenure Squared/100	0.483	(0.871)	0.549	(0.964)	0.693	(1.346)
Years in Occupation < 5 years*	0.415	(0.493)	0.423	(0.494)	0.415	(0.493)
Years in Occupation 5-9 years	0.328	(0.470)	0.282	(0.450)	0.254	(0.435)
Years in Occupation > 9 years	0.257	(0.437)	0.295	(0.456)	0.332	(0.471)
Occupation and Industry Variables						
Percent Female	0.173	(0.234)	0.192	(0.243)	0.198	(0.224)
Supervisor	0.151	(0.358)	0.159	(0.366)	0.166	(0.372)
Small Firm *	0.096	(0.294)	0.120	(0.325)	0.143	(0.350)
Medium Firm	0.504	(0.500)	0.466	(0.499)	0.518	(0.500)
Large Firm	0.400	(0.490)	0.414	(0.493)	0.339	(0.473)
Mining	0.047	(0.211)	0.033	(0.180)	0.010	(0.100)
Light Manufacturing 1	0.049	(0.215)	0.049	(0.215)	0.046	(0.210)
Light Manufacturing 2*	0.109	(0.311)	0.109	(0.312)	0.085	(0.279)
Heavy Manufacturing 1	0.171	(0.376)	0.157	(0.364)	0.164	(0.370)
Heavy Manufacturing 2	0.302	(0.459)	0.326	(0.469)	0.335	(0.472)
Utilities/Construction	0.053	(0.224)	0.034	(0.182)	0.043	(0.203)
Commerce	0.038	(0.191)	0.040	(0.195)	0.048	(0.213)
Transport/Storage/Communication	0.112	(0.316)	0.116	(0.321)	0.057	(0.231)
Business Services	0.058	(0.233)	0.073	(0.260)	0.104	(0.305)
Social Services	0.062	(0.242)	0.063	(0.243)	0.108	(0.310)
Location Variables						
Seoul*	0.297	(0.457)	0.283	(0.451)	0.331	(0.471)
Pusan	0.097	(0.296)	0.098	(0.297)	0.071	(0.257)
Kyunggi	0.195	(0.396)	0.223	(0.416)	0.242	(0.428)
Kangwon, Choongchung, and Julla	0.154	(0.361)	0.158	(0.365)	0.153	(0.360)
Kyungsang	0.257	(0.437)	0.238	(0.426)	0.203	(0.402)
Number of Observations	366,690		19,219		26,873	

* Excluded dummy variable in full-sample regressions. Standard deviations in parentheses

Appendix Table 2. Earnings Regression Variable Means — Female

Year	*1971*		*1976*		*1980*		*1983*	
Dependent Variable								
Log Monthly Earnings	9.341	(0.502)	10.526	(0.390)	11.242	(0.343)	11.716	(0.354)
Time Input Variables								
Log Hours/Month	5.375	(0.182)	5.487	(0.228)	5.464	(0.181)	5.488	(0.179)
Part-Time	0.030	(0.171)	0.010	(0.098)	0.017	(0.130)	0.009	(0.096)
Education and Experience Variables								
Primary School and Below*	0.511	(0.500)	0.395	(0.489)	0.319	(0.466)	0.191	(0.393)
Middle School	0.347	(0.476)	0.398	(0.490)	0.452	(0.498)	0.492	(0.500)
High School	0.122	(0.327)	0.180	(0.384)	0.203	(0.402)	0.286	(0.452)
Junior College	—	—	0.010	(0.099)	0.011	(0.106)	0.015	(0.122)
College or Higher	0.020	(0.141)	0.016	(0.126)	0.015	(0.122)	0.016	(0.127)
Experience (age-education-6)	7.764	(5.252)	7.739	(6.485)	7.770	(7.298)	7.835	(7.946)
Experience Squared/100	0.879	(1.673)	1.019	(2.163)	1.136	(2.572)	1.245	(2.814)
Establishment-Specific Tenure	1.496	(1.704)	1.510	(1.905)	1.584	(1.908)	2.137	(2.214)
Tenure Squared/100	0.051	(0.157)	0.059	(0.240)	0.062	(0.215)	0.095	(0.251)
Years in Occupation < 5 years*	0.920	(0.272)	0.907	(0.290)	0.906	(0.293)	0.830	(0.376)
Years in Occupation 5 - 9 years	0.072	(0.258)	0.082	(0.275)	0.086	(0.280)	0.151	(0.358)
Years in Occupation > 9 years	0.008	(0.091)	0.010	(0.102)	0.009	(0.093)	0.020	(0.139)
Occupation and Industry Variables								
Percent Female	0.715	(0.261)	0.652	(0.247)	0.688	(0.244)	0.726	(0.259)
Supervisor	0.004	(0.060)	0.005	(0.073)	0.001	(0.037)	0.015	(0.123)
Small Firm *	0.213	(0.410)	0.169	(0.375)	0.152	(0.359)	0.084	(0.277)
Medium Firm	0.459	(0.498)	0.342	(0.474)	0.410	(0.492)	0.468	(0.499)
Large Firm	0.328	(0.469)	0.489	(0.500)	0.439	(0.496)	0.448	(0.497)
Mining	0.005	(0.067)	0.004	(0.066)	0.003	(0.053)	0.003	(0.059)
Light Manufacturing 1	0.062	(0.240)	0.051	(0.220)	0.048	(0.215)	0.048	(0.213)
Light Manufacturing 2*	0.464	(0.499)	0.437	(0.496)	0.447	(0.497)	0.421	(0.494)
Heavy Manufacturing 1	0.130	(0.336)	0.165	(0.371)	0.142	(0.349)	0.142	(0.349)
Heavy Manufacturing 2	0.173	(0.378)	0.212	(0.408)	0.218	(0.413)	0.223	(0.416)
Utilities/Construction	0.004	(0.067)	0.005	(0.069)	0.006	(0.077)	0.008	(0.087)
Commerce	0.023	(0.150)	0.022	(0.148)	0.025	(0.156)	0.029	(0.167)
Transport/Storage/Communication	0.076	(0.265)	0.025	(0.157)	0.042	(0.200)	0.051	(0.220)
Business Services	0.023	(0.151)	0.040	(0.195)	0.029	(0.167)	0.031	(0.174)
Social Services	0.040	(0.197)	0.039	(0.194)	0.040	(0.196)	0.045	(0.207)
Location Variables								
Seoul*	0.417	(0.493)	0.344	(0.475)	0.289	(0.453)	0.301	(0.459)
Pusan	0.173	(0.378)	0.196	(0.397)	0.189	(0.391)	0.179	(0.384)
Kyunggi	0.112	(0.316)	0.156	(0.363)	0.191	(0.393)	0.199	(0.399)
Kangwon, Choongchung, and Julla	0.150	(0.357)	0.135	(0.342)	0.125	(0.331)	0.128	(0.334)
Kyungsang	0.147	(0.355)	0.168	(0.374)	0.206	(0.404)	0.194	(0.395)
Number of Observations	68,721		11,817		165,772		227,732	

* Excluded dummy variable in full-sample regressions. Standard deviations in parentheses.

Appendix Table 2. (continued)

Year	*1986*		*1989*		*1992*	
Dependent Variable						
Log Monthly Earnings	11.989	(0.337)	12.504	(0.310)	12.978	(0.318)
Time Input Variables						
Log Hours/Month	5.439	(0.164)	5.403	(0.138)	5.350	(0.147)
Part-Time	0.007	(0.085)	0.005	(0.073)	0.013	(0.113)
Education and Experience Variables						
Primary School and Below*	0.112	(0.316)	0.101	(0.302)	0.120	(0.325)
Middle School	0.435	(0.496)	0.330	(0.470)	0.216	(0.411)
High School	0.405	(0.491)	0.504	(0.500)	0.533	(0.499)
Junior College	0.025	(0.155)	0.038	(0.191)	0.078	(0.268)
College or Higher	0.022	(0.147)	0.027	(0.162)	0.054	(0.226)
Experience (age-education-6)	8.071	(8.610)	9.458	(10.255)	11.988	(12.324)
Experience Squared/100	1.393	(3.077)	1.946	(3.776)	2.956	(4.952)
Establishment-Specific Tenure	2.449	(2.562)	2.675	(2.761)	3.141	(3.447)
Tenure Squared/100	0.126	(0.347)	0.148	(0.397)	0.217	(0.560)
Years in Occupation < 5 years*	0.800	(0.400)	0.768	(0.422)	0.714	(0.452)
Years in Occupation 5 - 9 years	0.168	(0.374)	0.183	(0.387)	0.204	(0.403)
Years in Occupation > 9 years	0.031	(0.175)	0.049	(0.216)	0.082	(0.275)
Occupation and Industry Variables						
Percent Female	0.703	(0.251)	0.669	(0.237)	0.619	(0.252)
Supervisor	0.010	(0.099)	0.013	(0.112)	0.008	(0.088)
Small Firm *	0.074	(0.263)	0.090	(0.286)	0.155	(0.362)
Medium Firm	0.510	(0.500)	0.462	(0.499)	0.574	(0.495)
Large Firm	0.415	(0.493)	0.448	(0.497)	0.271	(0.445)
Mining	0.004	(0.061)	0.003	(0.058)	0.001	(0.027)
Light Manufacturing 1	0.045	(0.206)	0.053	(0.224)	0.048	(0.214)
Light Manufacturing 2*	0.406	(0.491)	0.359	(0.480)	0.246	(0.431)
Heavy Manufacturing 1	0.126	(0.331)	0.097	(0.296)	0.123	(0.328)
Heavy Manufacturing 2	0.232	(0.422)	0.304	(0.460)	0.265	(0.441)
Utilities/Construction	0.009	(0.095)	0.005	(0.074)	0.009	(0.092)
Commerce	0.033	(0.180)	0.038	(0.192)	0.054	(0.226)
Transport/Storage/Communication	0.048	(0.213)	0.027	(0.161)	0.019	(0.138)
Business Services	0.034	(0.180)	0.041	(0.198)	0.074	(0.262)
Social Services	0.064	(0.246)	0.071	(0.258)	0.161	(0.368)
Location Variables						
Seoul*	0.283	(0.450)	0.256	(0.437)	0.323	(0.468)
Pusan	0.167	(0.373)	0.170	(0.375)	0.125	(0.330)
Kyunggi	0.196	(0.397)	0.222	(0.416)	0.225	(0.418)
Kangwon, Choongchung, and Julla	0.140	(0.347)	0.150	(0.358)	0.143	(0.350)
Kyungsang	0.214	(0.410)	0.201	(0.401)	0.184	(0.388)
Number of Observations	213,144		11,162		13,988	

* Excluded dummy variable in full-sample regressions. Standard deviations in parentheses.

Appendix Table 3. Log-Earnings Regression Estimates — Male

Year	*1971*	*1976*	*1980*	*1983*
Time Input Variables				
Log Hours/Month	0.172 *** (0.008)	0.172 *** (0.015)	0.311 *** (0.004)	0.234 *** (0.003)
Part-time	-0.081 *** (0.007)	0.068 ** (0.031)	-0.050 *** (0.005)	-0.099 *** (0.004)
Education and Experience Variables				
Middle School	0.164 *** (0.003)	0.110 *** (0.009)	0.091 *** (0.002)	0.063 *** (0.002)
High School	0.429 *** (0.004)	0.374 *** (0.010)	0.288 *** (0.002)	0.223 *** (0.002)
Junior College	— —	0.570 *** (0.020)	0.514 *** (0.004)	0.433 *** (0.003)
College or Higher	0.922 *** (0.005)	0.977 *** (0.013)	0.820 *** (0.003)	0.750 *** (0.003)
Experience (age-education-6)	0.056 *** (0.001)	0.045 *** (0.001)	0.044 *** (0.000)	0.043 *** (0.000)
Experience Squared/100	-0.089 *** (0.001)	-0.076 *** (0.003)	-0.078 *** (0.001)	-0.080 *** (0.001)
Establishment-Specific Tenure	0.026 *** (0.001)	0.039 *** (0.002)	0.024 *** (0.000)	0.021 *** (0.000)
Tenure Squared/100	-0.049 *** (0.003)	-0.105 *** (0.011)	-0.069 *** (0.003)	-0.046 *** (0.002)
Years in Occupation 5-9 yrs	0.120 *** (0.003)	0.081 *** (0.008)	0.116 *** (0.002)	0.113 *** (0.001)
Years in Occupation > 9 yrs	0.163 *** (0.005)	0.116 *** (0.012)	0.178 *** (0.003)	0.177 *** (0.002)
Occupation and Industry Variables				
Percent Female	-0.315 *** (0.006)	-0.240 *** (0.015)	-0.264 *** (0.003)	-0.272 *** (0.003)
Supervisor	0.167 *** (0.006)	0.215 *** (0.011)	0.278 *** (0.003)	0.154 *** (0.002)
Medium Firm	0.209 *** (0.003)	0.110 *** (0.008)	0.080 *** (0.002)	0.113 *** (0.002)
Large Firm	0.308 *** (0.004)	0.197 *** (0.008)	0.109 *** (0.002)	0.167 *** (0.002)
Mining	0.001 (0.007)	0.165 *** (0.017)	0.228 *** (0.005)	0.251 *** (0.003)
Light Manufacturing 1	-0.007 (0.006)	0.039 ** (0.016)	0.074 *** (0.004)	0.066 *** (0.003)
Heavy Manufacturing 1	-0.064 *** (0.005)	0.010 (0.011)	0.028 *** (0.003)	0.046 *** (0.002)
Heavy Manufacturing 2	-0.109 *** (0.005)	0.023 ** (0.011)	-0.014 *** (0.003)	0.014 *** (0.002)
Utilities/Construction	0.176 *** (0.007)	0.193 *** (0.018)	0.128 *** (0.004)	0.162 *** (0.003)
Commerce	-0.043 *** (0.009)	0.034 * (0.020)	0.091 *** (0.004)	0.080 *** (0.003)
Transport/Storage/Communic.	0.067 *** (0.005)	0.015 (0.014)	0.114 *** (0.003)	0.183 *** (0.002)
Business Services	0.292 *** (0.007)	0.235 *** (0.016)	0.167 *** (0.004)	0.171 *** (0.003)
Social Services	0.059 *** (0.007)	0.030 ** (0.015)	0.112 *** (0.004)	0.182 *** (0.003)
Location Variables				
Pusan	-0.132 *** (0.004)	-0.027 *** (0.009)	-0.092 *** (0.002)	-0.077 *** (0.002)
Kyunggi	-0.101 *** (0.004)	-0.052 *** (0.010)	-0.055 *** (0.002)	-0.078 *** (0.002)
Kangwon,Choongchung,&Julla	-0.165 *** (0.004)	-0.086 *** (0.010)	-0.114 *** (0.002)	-0.115 *** (0.002)
Kyungsang	-0.133 *** (0.004)	0.029 *** (0.009)	-0.033 *** (0.002)	-0.038 *** (0.002)
Constant	8.129 *** (0.043)	9.303 *** (0.085)	9.486 *** (0.024)	10.272 *** (0.018)
Number of Observations	120,899	18,326	238,190	356,927
Adjusted R^2	0.570	0.572	0.610	0.620

* Statistically significant at the .10 level; ** at the .05 level; *** at the .01 level (two tailed tests).

Appendix Table 3. (continued)

Year	*1986*		*1989*		*1992*	
Time Input Variables						
Log Hours/Month	0.180 ***	(0.003)	0.378 ***	(0.015)	0.212 ***	(0.011)
Part-time	-0.024 ***	(0.004)	0.066 ***	(0.016)	-0.052 ***	(0.015)
Education and Experience Variables						
Middle School	0.056 ***	(0.002)	0.040 ***	(0.010)	-0.011	(0.009)
High School	0.193 ***	(0.002)	0.143 ***	(0.010)	0.084 ***	(0.009)
Junior College	0.361 ***	(0.003)	0.279 ***	(0.013)	0.183 ***	(0.011)
College or Higher	0.683 ***	(0.003)	0.558 ***	(0.012)	0.416 ***	(0.010)
Experience (age-education-6)	0.041 ***	(0.000)	0.033 ***	(0.001)	0.032 ***	(0.001)
Experience Squared/100	-0.077 ***	(0.001)	-0.068 ***	(0.002)	-0.063 ***	(0.002)
Establishment-Specific Tenure	0.018 ***	(0.000)	0.022 ***	(0.001)	0.014 ***	(0.001)
Tenure Squared/100	-0.011 ***	(0.001)	-0.017 ***	(0.006)	-0.007 ***	(0.003)
Years in Occupation 5-9 yrs	0.089 ***	(0.001)	0.077 ***	(0.006)	0.091 ***	(0.005)
Years in Occupation > 9 yrs	0.146 ***	(0.002)	0.133 ***	(0.008)	0.155 ***	(0.006)
Occupation and Industry Variables						
Percent Female	-0.264 ***	(0.002)	-0.228 ***	(0.010)	-0.192 ***	(0.008)
Supervisor	0.144 ***	(0.002)	0.124 ***	(0.006)	0.137 ***	(0.005)
Medium Firm	0.084 ***	(0.002)	0.133 ***	(0.007)	0.018 ***	(0.005)
Large Firm	0.160 ***	(0.002)	0.230 ***	(0.007)	0.075 ***	(0.005)
Mining	0.196 ***	(0.003)	0.122 ***	(0.016)	0.041 **	(0.018)
Light Manufacturing 1	0.046 ***	(0.003)	0.020 *	(0.011)	0.027 ***	(0.009)
Heavy Manufacturing 1	0.059 ***	(0.002)	0.073 ***	(0.008)	0.030 ***	(0.007)
Heavy Manufacturing 2	0.049 ***	(0.002)	0.055 ***	(0.008)	0.009	(0.006)
Utilities/Construction	0.163 ***	(0.003)	0.100 ***	(0.013)	0.122 ***	(0.010)
Commerce	0.115 ***	(0.003)	0.059 ***	(0.012)	0.033 ***	(0.009)
Transport/Storage/Communic.	0.167 ***	(0.002)	0.033 ***	(0.009)	0.044 ***	(0.009)
Business Services	0.186 ***	(0.003)	0.022 **	(0.010)	0.057 ***	(0.008)
Social Services	0.241 ***	(0.003)	0.193 ***	(0.011)	0.097 ***	(0.008)
Location Variables						
Pusan	-0.078 ***	(0.002)	-0.095 ***	(0.008)	-0.005	(0.007)
Kyunggi	-0.057 ***	(0.001)	-0.053 ***	(0.006)	0.002	(0.005)
Kangwon,Choongchung,&Julla	-0.095 ***	(0.002)	-0.090 ***	(0.007)	-0.024 ***	(0.005)
Kyungsang	-0.024 ***	(0.001)	0.026 ***	(0.006)	0.016 ***	(0.005)
Constant	10.812 ***	(0.017)	10.237 ***	(0.081)	11.733 ***	(0.059)
Number of Observations	366,690		19,219		26,873	
Adjusted R^2	0.640		0.578		0.559	

* Statistically significant at the .10 level; ** at the .05 level; *** at the .01 level (two tailed tests).

Appendix Table 4. Log-Earnings Regression Estimates — Female

Year	*1971*		*1976*		*1980*		*1983*	
Time Input Variables								
Log Hours/Month	0.286 ***	(0.009)	0.274 ***	(0.013)	0.587 ***	(0.004)	0.586 ***	(0.003)
Part-time	-0.138 ***	(0.009)	0.118 ***	(0.029)	-0.048 ***	(0.005)	-0.094 ***	(0.006)
Education and Experience Variables								
Middle School	0.146 ***	(0.004)	0.079 ***	(0.007)	0.064 ***	(0.002)	0.053 ***	(0.002)
High School	0.580 ***	(0.006)	0.370 ***	(0.010)	0.283 ***	(0.002)	0.229 ***	(0.002)
Junior College	—	—	0.845 ***	(0.029)	0.736 ***	(0.006)	0.643 ***	(0.005)
College or Higher	1.197 ***	(0.012)	1.210 ***	(0.025)	0.945 ***	(0.006)	0.941 ***	(0.005)
Experience (age-education-6)	0.053 ***	(0.001)	0.031 ***	(0.002)	0.022 ***	(0.000)	0.023 ***	(0.000)
Experience Squared/100	-0.130 ***	(0.003)	-0.090 ***	(0.004)	-0.056 ***	(0.001)	-0.058 ***	(0.001)
Establishment-Specific Tenure	0.103 ***	(0.002)	0.062 ***	(0.002)	0.046 ***	(0.001)	0.038 ***	(0.000)
Tenure Squared/100	-0.567 ***	(0.018)	-0.137 ***	(0.017)	-0.123 ***	(0.005)	-0.058 ***	(0.004)
Years in Occupation 5-9 yrs	0.038 ***	(0.006)	0.078 ***	(0.011)	0.064 ***	(0.002)	0.052 ***	(0.002)
Years in Occupation > 9 yrs	0.232 ***	(0.020)	0.192 ***	(0.030)	0.221 ***	(0.008)	0.122 ***	(0.005)
Occupation and Industry Variables								
Percent Female	0.102 ***	(0.006)	-0.034 **	(0.013)	-0.054 ***	(0.003)	-0.064 ***	(0.002)
Supervisor	0.185 ***	(0.024)	0.094 ***	(0.036)	0.501 ***	(0.016)	0.133 ***	(0.004)
Medium Firm	0.089 ***	(0.004)	0.040 ***	(0.008)	-0.002	(0.002)	0.043 ***	(0.002)
Large Firm	0.197 ***	(0.004)	0.070 ***	(0.008)	0.030 ***	(0.002)	0.069 ***	(0.002)
Mining	0.160 ***	(0.021)	0.070 *	(0.041)	0.122 ***	(0.011)	0.167 ***	(0.009)
Light Manufacturing 1	-0.072 ***	(0.006)	-0.072 ***	(0.013)	-0.018 ***	(0.003)	0.030 ***	(0.003)
Heavy Manufacturing 1	0.004	(0.005)	0.066 ***	(0.009)	0.033 ***	(0.002)	0.021 ***	(0.002)
Heavy Manufacturing 2	0.093 ***	(0.004)	-0.080 ***	(0.008)	-0.065 ***	(0.002)	-0.026 ***	(0.001)
Utilities/Construction	0.303 ***	(0.021)	0.139 ***	(0.039)	0.121 ***	(0.008)	0.180 ***	(0.006)
Commerce	-0.004	(0.010)	-0.036 *	(0.019)	0.112 ***	(0.004)	0.186 ***	(0.003)
Transport/Storage/Communic.	0.192 ***	(0.006)	0.140 ***	(0.017)	0.337 ***	(0.003)	0.294 ***	(0.002)
Business Services	0.467 ***	(0.010)	0.308 ***	(0.016)	0.288 ***	(0.004)	0.415 ***	(0.003)
Social Services	0.222 ***	(0.009)	0.032 *	(0.017)	0.217 ***	(0.004)	0.293 ***	(0.003)
Location Variables								
Pusan	-0.167 ***	(0.004)	0.015 *	(0.008)	-0.071 ***	(0.002)	-0.073 ***	(0.002)
Kyunggi	-0.059 ***	(0.005)	0.006	(0.008)	-0.030 ***	(0.002)	-0.043 ***	(0.002)
Kangwon,Choongchung,&Julla	-0.222 ***	(0.004)	-0.021 **	(0.009)	-0.080 ***	(0.002)	-0.112 ***	(0.002)
Kyungsang	-0.130 ***	(0.004)	0.041 ***	(0.008)	-0.019 ***	(0.002)	-0.050 ***	(0.002)
Constant	7.098 ***	(0.050)	8.616 ***	(0.076)	7.781 ***	(0.022)	8.187 ***	(0.019)
Number of Observations	68,721		11,817		165,772		227,732	
Adjusted R^2	0.472		0.474		0.511		0.525	

* Statistically significant at the .10 level; ** at the .05 level; *** at the .01 level (two tailed tests).

Appendix Table 4. (continued)

Year	*1986*		*1989*		*1992*	
Time Input Variables						
Log Hours/Month	0.513 ***	(0.003)	0.609 ***	(0.018)	0.522 ***	(0.015)
Part-time	-0.056 ***	(0.006)	0.004	(0.030)	-0.045 ***	(0.017)
Education and Experience Variables						
Middle School	0.058 ***	(0.002)	0.051 ***	(0.009)	0.003	(0.008)
High School	0.191 ***	(0.002)	0.168 ***	(0.010)	0.131 ***	(0.009)
Junior College	0.600 ***	(0.004)	0.467 ***	(0.016)	0.370 ***	(0.012)
College or Higher	0.851 ***	(0.004)	0.683 ***	(0.017)	0.601 ***	(0.013)
Experience (age-education-6)	0.022 ***	(0.000)	0.014 ***	(0.001)	0.014 ***	(0.001)
Experience Squared/100	-0.057 ***	(0.001)	-0.039 ***	(0.002)	-0.033 ***	(0.002)
Establishment-Specific Tenure	0.032 ***	(0.000)	0.021 ***	(0.002)	0.023 ***	(0.001)
Tenure Squared/100	0.002	(0.003)	0.071 ***	(0.011)	0.034 ***	(0.007)
Years in Occupation 5-9 yrs	0.057 ***	(0.002)	0.065 ***	(0.007)	0.038 ***	(0.006)
Years in Occupation > 9 yrs	0.174 ***	(0.004)	0.151 ***	(0.014)	0.093 ***	(0.010)
Occupation and Industry Variables						
Percent Female	-0.067 ***	(0.002)	-0.050 ***	(0.010)	-0.095 ***	(0.008)
Supervisor	0.181 ***	(0.005)	0.140 ***	(0.020)	0.339 ***	(0.022)
Medium Firm	0.013 ***	(0.002)	0.070 ***	(0.008)	0.015 ***	(0.005)
Large Firm	0.068 ***	(0.002)	0.134 ***	(0.008)	0.055 ***	(0.006)
Mining	0.104 ***	(0.008)	0.046	(0.037)	-0.028	(0.069)
Light Manufacturing 1	0.022 ***	(0.003)	0.046 ***	(0.010)	-0.018 *	(0.009)
Heavy Manufacturing 1	0.011 ***	(0.002)	0.048 ***	(0.008)	-0.016 **	(0.007)
Heavy Manufacturing 2	0.020 ***	(0.001)	0.056 ***	(0.006)	-0.015 ***	(0.006)
Utilities/Construction	0.112 ***	(0.005)	0.075 ***	(0.029)	0.053 ***	(0.020)
Commerce	0.166 ***	(0.003)	0.154 ***	(0.012)	0.048 ***	(0.009)
Transport/Storage/Communic.	0.179 ***	(0.002)	0.034 **	(0.014)	0.022	(0.014)
Business Services	0.239 ***	(0.003)	0.026 **	(0.012)	0.118 ***	(0.008)
Social Services	0.222 ***	(0.003)	0.225 ***	(0.011)	0.119 ***	(0.007)
Location Variables						
Pusan	-0.095 ***	(0.002)	-0.057 ***	(0.007)	-0.047 ***	(0.007)
Kyunggi	-0.053 ***	(0.002)	0.012 *	(0.006)	0.010 *	(0.005)
Kangwon,Choongchung,&Julla	-0.117 ***	(0.002)	-0.058 ***	(0.007)	-0.057 ***	(0.006)
Kyungsang	-0.074 ***	(0.001)	0.029 ***	(0.007)	0.008	(0.006)
Constant	8.897 ***	(0.019)	8.835 ***	(0.097)	9.908 ***	(0.080)
Number of Observations	213,144		11,162		13,988	
Adjusted R^2	0.552		0.491		0.537	

* Statistically significant at the .10 level; ** at the .05 level; *** at the .01 level (two tailed tests).

Endnotes

1. The direction of the law's impact on relative earnings is not clear. Equal opportunity provisions should work to lower employment segregation by gender and improve women's relative earnings. However, the law's new maternity benefits to supplement those already in existence may act as a tax on firms and cause them to lower women's wages. See Zveglich and Rodgers (1996) on the impact of protective measures for female workers.

2. For example, see Bai and Cho (1992), Birdsall and Sabot (1991), Gannicott (1986), Kao, Polachek, and Wunnava (1994), Lee (1991), and Lee and Lindauer (1991). Zveglich, Rodgers, and Rodgers (1995) is the only previous study to use the trend analysis to examine a developing country's gender earnings differential, in this case Taiwan.

3. I dropped several other outliers where reported working hours exceeded the maximum possible total, and where reported earnings far exceeded reported base earnings plus reported overtime earnings.

4. I multiplied the reported earnings of these individuals by 1.2; no one reaches the top code in other years. I did not include bonuses in the construction of monthly earnings because data are available only for annual bonus earnings. Also, as reported in Ito and Kang (1989) and Lee and Rhee (1996), bonuses are more sensitive to macroeconomic aggregates such as total corporate profits, value added, and industrial output than are base earnings and overtime earnings.

5. The only exception is that the 1971 survey groups junior college and four-year college graduates together. In other years I control for this difference in educational attainment with separate dummy variables in all the procedures except the trend decomposition.

6. Another drawback is that the surveys have a sampling bias toward younger workers in the manufacturing sector (Kwark and Rhee, 1993, Kim and Topel, 1995). The original tapes do not provide sampling weights, and I did not attempt to reweight the data to correct for this limitation.

7. The survey codes the responses for educational attainment as a categorical variable. In the construction of potential experience, I approximate the following number of years of education for each reported level of attainment: Primary and Below (6), Middle School (9), High School (12), Junior College (14), and College and Above (17).

8. I cannot use years of occupation-specific tenure and its square because the survey codes the responses as a categorical variable.

9. The four manufacturing dummies are defined as follows: Light Manufacturing 1 includes food, beverages, and tobacco; Light Manufacturing 2 includes textiles, apparel, and leather; Heavy Manufacturing 1 includes wood, paper, chemicals, and non-metallic minerals; and Heavy Manufacturing 2 includes iron, steel, fabricated metals, machinery, and equipment.

10. This method, which follows the approach in Juhn, Murphy, and Pierce (1991), Blau and Kahn (1992), and Rodgers (1993), is an alternative to the well known decomposition first used in Oaxaca (1973) and Blinder (1973). See Zveglich, Rodgers, and Rodgers (1995) for a discussion on the difference between these two approaches.

11. Goldin (1990) has a thorough discussion on the use of male versus female coefficients.

12. Given the labor policy changes described in the introduction, 1986 also serves as a sensible break point, and results are indeed similar when using 1971-86 and 1986-92 as alternative sub-periods

13. I thank John Bauer for providing me with several of these descriptive statistics on female attachment to the labor market.

14. For documentation of Korean labor laws see Republic of Korea (1992), and for discussion of the equal opportunity law's enforcement, see *The Economist*, "The Battle of the Belly-button, September 24, 1994, p. 39.

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